

CLAIMS

1. A hollow metal club head comprising a face portion whose front surface defines a club face for hitting a ball, and a turnback wall extending backward from a circumferential edge of the face portion, wherein
a head volume is in a range of not less than 440 cc, a height of the club face is in a range of from 55 to 85 mm, a surface area of the club face is in a range of from 4000 to 6500 sq.mm, and in a front end zone of the turnback wall and a peripheral zone of the face portion which are adjacent to each other through a junction between the turnback wall and the face portion, the ratio R_f/R_h of a zone rigidity R_f of the peripheral zone to a zone rigidity R_h of the front end zone is in a range of from 4.0 to 12.0, wherein

$$R_h = E_h \times t_h^3$$

$$R_f = E_f \times t_f^3$$

E_h is Young's modulus in GPa of the turnback wall in the front end zone,

t_h is average thickness in mm of the turnback wall in the front end zone,

E_f is Young's modulus in GPa of the face portion in the peripheral zone, and

t_f is average thickness in mm of the face portion in the peripheral zone.

2. The club head according to claim 1, wherein

a primary frequency of a frequency transfer function of the face portion is in a range of from 650 to 850 Hz.

3. The club head according to claim 1, wherein
the peripheral zone extends continuously along the
circumferential edge of the club face.
4. The club head according to claim 1, wherein
the front end zone extends across at least a range (ZR)
having a width corresponding to a height (H) of the club face and
centered on the centroid (S) of the club face.
5. The club head according to claim 1, wherein
the front end zone extends 10 mm backwards from the front
end of the turnback wall, and
the peripheral zone extends between 3 mm and 15 mm from
the circumferential edge of the club face towards the centroid of
the club face.
6. The club head according to claim 1, wherein
the front end zone extends between 3 mm and 13 mm backward
from the circumferential edge of the club face,
the peripheral zone extends between 3 mm and 15 mm from
the circumferential edge of the club face towards the centroid of
the club face.
7. The club head according to claim 1, wherein
the Young's modulus in the peripheral zone is the same as
the Young's modulus in the front end zone.
8. The club head according to claim 1, wherein
the Young's modulus in the peripheral zone is smaller than

the Young's modulus in the front end zone.

9. The club head according to claim 1, wherein

the face portion is made of a metal material, and in the front end zone, the Young's modulus is in a range of from 8.0 to 9.0 GPa and the average thickness t_h is in a range of from 0.7 to 1.2 mm, and

the turnback wall is made of a metal material, and in the peripheral zone, the Young's modulus is in a range of from 6.8 to 7.5 GPa and the average thickness t_f is in a range of from 1.6 to 2.2 mm.